

Claims: Cancel all claims of record and substitute new claims 21 to 40 as follows.

21. A force generator comprising:

a generator frame;

a rotor including a shaft, a rotary shell having an open bottom, a means supporting a gas in relative equilibrium inside said rotary shell, said shaft having bearing supporters secured to said generator frame;

a stationary means closing said open bottom of said rotary shell, said stationary means being secured to said generator frame under said open bottom of said rotary shell;

whereby said force generator produces the maximum difference between the pressures of the gas acting on its lower and upper surfaces, i.e. maximum lift.

22. The force generator of claim **21** wherein said means supporting the gas in relative equilibrium inside said rotary shell comprises a plurality of dividing walls extending from said shaft to said rotary shell.

23. The force generator of claim **22** wherein said shaft comprises an assembling member secured to said dividing walls and an assembled shaft.

24. The force generator of claim **23** wherein said assembling member is tubular.

25. The force generator of claim **24** further includes a compensating gas means for compensating the amount of gas exhausted out of the space bounded by said rotary shell and said stationary means due to the centrifugal force during rotation of said rotary shell.

26. The force generator of claim **25** wherein said compensating gas means is a fan in a fan duct.

27. The force generator of claim **25** wherein said compensating gas means is a compressor.

28. The force generator of claim **25** wherein said stationary means is a disk, each of dividing walls is a rectangular plate.

29. The force generator of claim **25** wherein said rotary shell covers the surface swept by the top edges and an upper part of outer edges of said dividing walls

due to their rotation about the axis of said shaft, and said stationary means is a circumferential tube having a disk-bottom.

30. The force generator of claim **25** wherein each of said dividing walls is a plate having a trapezium shape.

31. A mobile object including a force generator according to claim **25** and further comprising:

a hermetically sealed generator chamber enclosing said force generator and being filled with a pressurized gas;

a structural frame securing said generator chamber and said generator frame;

an engine being operatively connected to said shaft of said force generator by a mechanical transmission means;

whereby said mobile object produces its self-action force that allows it to accelerate itself in any environment without the use of jets, reactive or external forces, and the self-action force of said mobile object can be increased as many times as desirable due to increasing the pressure of the gas inside said generator chamber.

32. A conventional vehicle including a plurality of force generators according to claim **25** and further comprising:

a hermetically sealed generator chamber enclosing said force generators and being filled with a pressurized air, some of said force generators being

vertically mounted and the other force generators being horizontally mounted;

a plurality of engines, the shaft of each of said force generators being operatively connected to one of said engines by a mechanical transmission means to be driven from said engine;

whereby said conventional vehicle produces its self-action force that allows it to accelerate itself in any environment without the use of jets, reactive or external forces, and the self-action force of said conventional vehicle can be increased as many times as desirable due to increasing the pressure of the air inside said generator chamber.

- 33.** A conventional aircraft including a pair of identical counter-rotating force generators according to claim **25** and further comprising:
- a hermetically sealed generator chamber enclosing said force generators and being filled with a pressurized air, said force generators being vertically mounted;
 - a pair of engines, the shaft of each of said force generators being operatively connected to one of said engines by a mechanical means to be driven from said engine;
- whereby said conventional aircraft can take-off and land vertically by its self-action force, that also allows the conventional aircraft to fly at any height and lift larger weight by increasing the pressure of the air inside said generator chamber.
- 34.** The conventional aircraft of claim **33** further including another pair of identical counter-rotating force generators according to claim **25** and another pair of engines, said force generators being horizontally mounted inside said hermetically sealed generator chamber for propulsion, the shaft of each of said force generators being operatively connected to one of said engines by a mechanical transmission means to be driven from said engine;
- whereby said conventional aircraft produces its self-action force for propulsion that can be increased as many times as desirable due to increasing the pressure of the air inside said generator chamber.
- 35.** The conventional aircraft of claim **34** wherein the wings of said conventional aircraft is removed.
- 36.** A mobile object including a plurality of pairs of identical counter-rotating force generators according to claim **25** and further comprising:
- a structural frame;
 - a flying saucer shaped body being secured to said structural frame;
 - a passenger cabin having a floor attached to said structural frame, a plurality of doors for human gateways, and a plurality of screen windows for human vision;

a turning means;

a control motor;

a hermetically sealed generator chamber being filled with a pressurized air, said force generators, said turning means, and said control motor are mounted inside said generator chamber, the force generators of one of said pairs being horizontally mounted on said turning means, which is controlled by said control motor, the force generators of the other pairs being vertically mounted for lifting;

a plurality of engines;

an auxiliary power unit;

a pump system being powered from said auxiliary power unit for pressurization of the air in said generator chamber and said passenger cabin;

a machine cabin for mounting said engines, said auxiliary power unit, and said pump system, the shaft of each of said vertically mounted force generators being operatively connected to one of said engines by a mechanical transmission means to be driven from said engine, the shafts of said horizontally mounted force generators being operatively connected to one of said engines by a mechanical means to be driven from said engine, each of said engines being connected to said mechanical means by a means selectively disengaging said engine from said mechanical transmission means;

a plurality of suspension piers allowing said mobile object to stand on the ground;

a plurality of wheels allowing said mobile object to run on the ground;

a fuel tank being mounted in said machine cabin for providing said engines and said auxiliary power unit with fuel;

a control system being mounted in a cockpit for controlling the devices of said mobile object;

whereby said mobile object produces its self-action force that allows it to accelerate itself in any direction and environment without the use of jets, reactive

or external forces, and the self-action force of said mobile object can be increased as many times as desirable due to increasing the pressure of the air inside said generator chamber.

37. The mobile object of claim **36** further including photovoltaic panels and a plurality of electrical motors powered from said photovoltaic panels, each of said electrical motors being connected to one of said mechanical transmission means by a means for selectively disengaging said electrical motor from said mechanical transmission means; whereby said mobile object can accelerate itself by using solar energy.

38. A mobile object including two identical counter-rotating force generators according to claim **25** and further comprising:

a structural frame;

a body of aerodynamic shape being secured to said structural frame;

a pilot cabin having a floor attached to said structural frame, a door for human climbing, and a glass screen for human vision;

a pair of engines;

a tilting means having an upper plane;

a machine cabin for mounting said force generators and said engines, said force generators being vertically mounted for lifting on the upper plane of said tilting means, the shaft of each of said force generators being operatively connected to one of said engines by a mechanical transmission means;

a plurality of suspension piers allowing said mobile object to stand on the ground;

a plurality of wheels allowing said mobile object to run on the ground;

a fuel tank mounted in said machine cabin for providing said engines with fuel;

a control unit mounted in the front of said pilot cabin for controlling the devices of said mobile object;

whereby said mobile object produces its self-action force for vertical taking-off and landing and horizontal propulsion without the use of jets, reactive or external

forces.

39. The mobile object of claim **38** wherein said tilting means comprising:

- a hydraulic circuit having a pump that is powered from another engine mounted in said machine cabin;

- a pair of hydraulic jacks that are operatively connected to said hydraulic circuit;

- a pair of struts being secured to said structural frame;

- a rectangular frame for securing said force generators, the ends of one edge of said rectangular frame being operatively jointed with the tops of said hydraulic jacks, said rectangular frame having a shaft and bearing supporters arranged in said struts.

40. A mobile object comprising:

- a structural frame;

- a hermetically sealed generator chamber being filled with a pressurized gas and secured to said structural frame;

- a rotor of blades having an airfoil cross-section and being enclosed inside said generator chamber;

- a shaft for mounting said rotor of blades, said shaft having bearing supporters secured to said structural frame;

- a pump system for pressurization of the gas in said generator chamber;

- an engine being operatively connected to said shaft by a mechanical transmission means;

whereby said mobile object produces its self-action force defined by the lift of said rotor of blades that allows it to accelerate itself in any environment without the use of jets, reactive or external forces, and the lift of said rotor of blades can be increased as many times as desirable due to increasing the pressure of the gas inside said generator chamber.

REMARKS – General

By the above amendment, Applicant has submitted an entirely retyped specification to present the well grounded fundamentals of physics establishing the

invention.

Also applicant has rewritten all claims to define the invention more particularly and distinctly so as to overcome the technical rejections and define the invention patentably over the prior art.

In the substitute specification applicant has added the following:

(a) The correct theory of the dynamics of a solid-fluid body that is the generalized model of the mobile objects of the invention. More specifically, each solid-fluid body is a hermetically sealed solid chamber filled up with a fluid and containing a set of internal solid elements. Thus in the theory each mobile object with force generators is researched as a whole system.

(b) The discovery of the self-action force and the correct proof of the self-action principle of a solid-fluid body, which states that a solid-fluid body except external forces is acted upon by a self-action force defined by formula (513).

(c) The disproof of Newton's laws of motion for the dynamics of solid-fluid bodies by using the above self-action principle.

(d) The establishment of the generalized Newton's laws of motion as consequences of the self-action principle. The generalized Newton's laws have shown that the original Newton's laws of motion are special cases of the generalized Newton's laws when the fluid is absent in the bodies or their total internal momentum is constant. Therefore, the self-action principle does not contradict Newton's laws of motion, but has generalized them for a wider class of bodies by including the internal momentums of the bodies in the laws. In other words, the mechanics of solid-fluid bodies is a natural generalization of Newton's mechanics of solid bodies.

(e) The establishment of the conservation law for momentum of a solid-fluid body as a consequence of the self-action principle. The conservation law for momentum of a solid-fluid body has shown that the conservation law for momentum of a solid body based on the original Newton's laws of motion is a special case of the conservation law for momentum of a solid-fluid body when its fluid is absent or its total internal momentum is constant. Therefore, the self-action principle does not

contradict the conservation law for momentum of a solid body based on the original Newton's laws of motion, but has generalized it for a wider class of bodies by including the internal momentums of the bodies in the law.

(f) The mathematical analysis of mobile object **40** with force generator **42** based on the self-action principle. The system of formulae (569), (541), (548) (or (551)), (555), (560)(or (562)), and (564) derived from the mathematical analysis allow to calculate the self-action force of mobile object **40** for different values of its size, angular velocity, and pressure of the gas at rest p_0 . The values of the self-action force of mobile object **40** calculated for some values of the angular velocity and radius of rotor **54** with a fixed p_0 are presented in table A.

(g) The test of the self-action force produced by an experimental model of mobile object **40** and the test of the lift produced by experimental models of force generator **42** alone.

(h) The mathematical analysis of mobile object **168** based on the self-action principle. Formula (583) derived from the mathematical analysis shows that the self-action force of mobile object **168** is almost equal to the lift of rotor **178** when the height of generator chamber **172** is sufficiently large. The self-action force of mobile object **168** has been also tested experimentally.

(i) The summary of the principles of the invention has been rewritten for the sake of more precise reflection of the foundations establishing the invention.

(j) The abstract has been rewritten for the sake of more precise reflection of the invention.

The claims have been amended as follows:

Claim 1 has been rewritten as new claim 21. Claim 21 has been made narrower than claim 1 by substituting the rotor for the accompanying gas means. In order to emphasize the new physical features, which distinguish the rotor of the force generator from the rotors of other lift devices, and their functions claim 21 recites the rotary shell having an open bottom and the means supporting the gas in relative equilibrium inside the rotary shell, since the shell always rotates together with the

shaft of the rotor and the function of the dividing walls is the support of the gas in relative equilibrium inside the rotary shell. In order to emphasize the strict functional connection between the stator and rotor claim 21 recites the stationary means closing said open bottom of said rotary shell instead the stator. In other words, the stationary means (or stator) closing the open bottom of the rotary shell is another new physical feature of the force generator that coordinates with the rotor to support the gas in relative equilibrium. Finally, the whereby clause is added to claim 21 in order to emphasize the maximum lift achieved due to the new physical features of the force generator.

Claims 2-10 have been rewritten as new claims 22-30 such that they become dependent on claim 21 and more grammatically precise.

Claims 11-17 have been rewritten as new claims 31-37 such that they become dependent on claim 21 and more grammatically precise. Moreover, in order to emphasize the pressurized gas in the generator chambers of the mobile objects of claims 31-37 the adjective "hermetically sealed" is added to the word "generator chamber". The whereby clause is also added to claims 31-37 in order to emphasize the generation of the self-action force of the mobile objects of claims 31-37, which allows the mobile objects to accelerate themselves in any environment without the use of jets, reactive or external forces, and the possibility of increasing their self-action force as many times as desirable due to increasing the pressure of the gas inside their generator chambers.

Claim 18 and 19 have been rewritten as new claims 38 and 39 such that they become dependent on claim 21 and more grammatically precise. The whereby clause is also added to claims 38 and 39 in order to emphasize the generation of the self-action force of the mobile objects of claims 38 and 39 for their vertical taking-off and landing and propulsion without the use of jets, reactive or external forces.

Claim 20 has been rewritten as new claim 40 such that it becomes more grammatically precise. In order to emphasize the pressurized gas in the generator chamber of the mobile object of the claim the adjective "hermetically sealed" is

added to the word "generator chamber". The whereby clause is also added to claim 40 in order to emphasize the generation of the self-action force of the mobile object of the claim, which allows the mobile object to accelerate itself in any environment without the use of jets, reactive or external forces, and the possibility of increasing its lift as many times as desirable due to increasing the pressure of the gas inside its generator chamber.

The Rejection Of Claims 11-20 Under 35 USC § 101 Is Overcome

Claims 11-20 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a credible asserted utility or a well established utility.

The substitute specification has included the correct mathematical proof and test result of the self-action principle that has discovered the self-action force of the invented mobile objects cited in claims 11-20, now rewritten as new claims 31-40, and credibly asserted the utility of the invention. Applicant requests reconsideration and withdrawal of this rejection, as now applicable to claims 31-40, for the following reasons:

(1) The self-action principle of a solid-fluid body, presented in the substitute specification, is the well grounded fundamental that has established the credible asserted utility of the claimed invention. Each mobile object of the invention is a solid-fluid body that is a hermetically sealed solid chamber filled up with a fluid and containing a set of internal solid elements. The self-action principle states that a solid-fluid body except external forces is acted upon by a self-action force defined by formula (531). In other words, the self-action principle has affirmed the existence of the self-action force of solid-fluid bodies. The self-action principle has been proven strictly on the base of the known laws of mechanics.

(2) The existence of the self-action force has disproved all Newton's laws of motion for solid-fluid bodies, because the self-action force of a solid-fluid body is the total of its internal forces. In other words, all Newton's laws of motion are broken down for solid-fluid bodies, since in accordance with the laws the total of internal

forces of any body should be zero. The breakdown of each of Newton's laws of motion for solid-fluid bodies has been proved in the substitute specification.

(3) The generalized Newton's laws, which are consequences of the self-action principle, have asserted that the original Newton's laws of motion are special cases of the generalized Newton's laws when bodies contain no fluid or the total of their internal momentums is constant. Thus the generalized Newton's laws have shown that the neglect of the internal momentums is the reason of the breakdown of Newton's laws for solid-fluid bodies. In other words, the generalized Newton's laws have pointed out why Newton's laws are broken down and how they can be corrected by the self-action principle. Therefore, the self-action principle does not contradict Newton's laws, but has generalized them for a wider class of bodies by including the internal momentums of the bodies in the laws.

(4) The conservation law for momentum of a solid-fluid body, which is a consequence of the self-action principle, has asserted that the conservation law for momentum of a solid body based on Newton's laws is a special case of the conservation law for momentum of a solid-fluid body when the body contains no fluid or its total internal momentum is constant. Therefore, the self-action principle does not contradict the conservation law for momentum of a solid body based on the original Newton's laws, but has generalized it for a wider class of bodies by including the internal momentums of the bodies in the law.

(5) The results of the mathematical analysis of mobile object **40** and **168** based on the self-action principle and experimental tests have asserted the credible utility of the mobile objects of the claimed invention.

(6) Each force generator of the mobile objects of the claimed invention produces the maximum lift, i.e. maximum difference between the pressures of the gas acting on its lower and upper surfaces, due to the novel physical features supporting the gas in relative equilibrium. Therefore, mobile object **40**, which contains only one force generator of sufficiently small radius and angular velocity, already produces very large self-action force, i.e. lift as shown in table A.

(7) The claimed invention has discovered the new use of all aerodynamic devices including the conventional airfoil rotors and force generators disclosed in the invention. Up to now no one has thought that a lift device enclosed in a hermetically sealed chamber can produce a lift at all because of the restrictions defined by Newton's laws of motion. The self-action principle has asserted that a mobile object with force generators, airfoil rotors or any other aerodynamic lift devices enclosed in its pressurized chamber can produce its self-action force, i.e. lift. The hermetic enclosure of aerodynamic lift devices allows the mobile object to accelerate itself in any environment (in the atmosphere, in water, on the ground, in cosmos, etc.) without the use of jets, reactive or external forces. This is an unexpected result of the new use of aerodynamic lift devices. The hermetic enclosure of aerodynamic lift devices also allows increasing their lift as many times as desirable due to increasing the pressure of the gas in the chamber enclosing them. This is another unexpected result of the new use of aerodynamic lift devices in the vehicle technology. In particular, mobile object **168** with airfoil rotor **170** allows employing the immense accumulation of results of aerodynamic research in their new use.

The Rejection Of Claims 1-20 Under 35 § 112, First Paragraph, Is Overcome

Claims 1-20 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

The substitute specification has included the correct mathematical proof and test result of the self-action principle that has discovered the self-action force of the invented mobile objects cited in claims 11-20, now rewritten as new claims 31-40, and credibly asserted the utility of the invention. The substitute specification has also included the correct mathematical analysis of the force generators of said mobile objects. Claims 1-20 have been now rewritten as new claims 21-40. Since the reasons of the rejection of claims 1-20 under 35 U.S.C. 112, first paragraph, are the same as the reasons of the above rejection of claims 11-20 under 35 U.S.C. 101,

applicant requests reconsideration and withdrawal of this rejection, as now applicable to claims 21-40 for the same reasons that have been presented above.

The Rejection Of Claims 1-20 Under 35 USC § 112, Second Paragraph, Is Overcome

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 to 20 have been rewritten as new claims 21 to 40 to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant requests reconsideration and withdrawal of this rejection, as now applicable to claims 21-40, for the following reasons:

(1) Each of claims 21-40 points out its novel physical features that distinguish over the prior art.

(2) The novel physical features of each of claims 21-40 produce new and unexpected results and hence are unobvious and patentable over the prior art.

Below applicant discusses the above two reasons for each of claims 21-40:

Claim 1, now rewritten as new claim 21, recites three novel physical features of the force generator that are absent from aerodynamic lift devices of the prior art (airfoil rotors, lift disks, etc.). The three novel physical features are the rotary shell having an open bottom, the means supporting a gas in relative equilibrium inside said rotary shell, and the stationary means closing the open bottom of said rotary shell. The unexpected result produced by the three novel physical features is the maximum lift, i.e. the maximum difference between the pressures of the gas acting on the lower and upper surfaces of said force generator. Those skilled in the art know that the lift of a lift device is defined by the difference between the pressures of the gas acting on its lower and upper surfaces. In turn, the difference between the pressures of the gas acting on the lower and upper surfaces of the lift device is defined by the difference between the relative velocities of the gas flows on its lower and upper surfaces. When the angular velocity of a lift device of the prior art (airfoil

rotors, lift disks, etc.) increases, the relative velocities of the gas flows on its lower and upper surfaces increase almost equally, i.e. with almost the same value, since the lift device has no physical features supporting the gas on its lower surfaces in relative equilibrium. Therefore, the difference between the pressures of the gas acting on the lower and upper surfaces of the lift device of the prior art is much less than the maximum value, which could be achieved only in the condition of the relative equilibrium of the gas on its lower surfaces. The three novel physical features of the force generator are mutual functional members. The rotary shell and the means supporting the gas in relative equilibrium inside the shell constitute the rotor of the force generator that distinguishes from the rotor of any lift device of the prior art, which includes no rotary shell and does not support a gas in relative equilibrium. The special arrangement of the rotor of the force generator and the stationary means closing the open bottom of the rotary shell of the rotor allows them to coordinate strictly with each other. Their strict coordination supports the gas on the lower surfaces of the force generator, i.e. the rotary shell together with the stationary means, in relative equilibrium, while the relative velocity of the gas on its upper surfaces is proportional to the angular velocity of the shaft of its rotor. Thus the specific coordination of the three novel physical features produces the maximum difference between the pressures of the gas acting on the lower and upper surfaces of the force generator, i.e. the maximum lift. Since claim 21 defines the novel physical features that produce the new and unexpected result as presented above, applicant submits that such claim is clearly unobvious and patentable over the prior art.

Claims 2 to 10, now rewritten as new claims 22 to 30, are dependent on claim 21. Therefore, new dependent claims 22 to 30 incorporate all the subject matter of claim 21 and add additional subject matter, which make them a fortiori and independently patentable over the prior art.

Claims 11 to 17, now rewritten as new claims 31 to 37, are dependent on claim 21. Therefore, new dependent claims 31 to 37 incorporate all the subject matter of

claim 21 and add additional subject matter, which make them a fortiori and independently patentable over the prior art. Among the added subject matter claims 31-37 further add the hermetically sealed generator chamber enclosing the force generators and being filled with the pressurized gas. The force generators enclosed in the hermetically sealed generator chamber produce the self-action force of the mobile object of each of claims 31-37. The produced self-action force is another unexpected result of claim 31-37, since up to now those skilled in the art have thought that the enclosed lift devices are unworkable due to the restrictions defined by Newton's laws of motion. The self-action force allows the mobile objects of claims 31-37 to accelerate themselves in any environment (in the air, water, cosmos, etc.) without the use of jets, reactive or external forces. Another unexpected result produced by the hermetically sealed generator chamber enclosing the force generators and being filled with the pressurized gas is that the self-action force (or the lift) of the mobile object of each of claims 31-37 can be increased as many times as desirable due to increasing the pressure of the gas inside its generator chamber. Since each of claims 31-37 defines the novel physical features that produce the new and unexpected results as presented above, applicant submits that such claims are clearly unobvious and patentable over the prior art.

Claims 18 and 19, now rewritten as new claims 38 and 39, are dependent on claim 21. Therefore, new dependent claims 38 and 39 incorporate all the subject matter of claim 21 and add additional subject matter, which make them a fortiori and independently patentable over the prior art. Among the added subject matter claims 38 and 39 further add the machine cabin for mounting the force generators which produce the self-action force of the mobile object for vertical taking-off and landing and horizontal motion without the use of jets, reactive or external forces. Since each of claims 38 and 39 defines the novel physical features that produce the new and unexpected results as presented above, applicant submits that such claims are clearly unobvious and patentable over the prior art.

Claim 20, now rewritten as new claim 40, recites three novel physical features of the lift device of the mobile object, which are absent from aerodynamic lift devices of the prior art (airfoil rotors, lift disks, etc.). The three novel physical features are the hermetically sealed generator chamber filled with a pressurized gas, the enclosure of the rotor of blades having an airfoil cross-section inside said generator chamber, and the pump system for pressurization of the gas in said generator chamber. The unexpected results produced by the three novel physical features are the self-action force and possibility of increasing the self-action force, i.e. the lift, of the mobile object of claim 40 as many times as desirable due to increasing the pressure of the gas inside its generator chamber. Up to now no disclosed lift device was supposed to be enclosed in a hermetically sealed chamber and to work in a pressurized chamber, since those skilled in the art have thought that such enclosed lift device produces no lift due to the restrictions defined by Newton's laws of motion. Therefore, the self-action force produced by the rotor of blades having an airfoil cross-section and being enclosed in the generator chamber filled with the pressurized gas is the unexpected result of claim 40. The self-action force allows the mobile object to accelerate itself in any environment (in the air, water, cosmos, etc.) without the use of jets, reactive or external forces. The possibility of increasing the lift of the mobile object of claim 40 due to increasing the pressure of the gas inside its generator chamber allows the rotor to increase its lift without increasing its sizes. Since claim 40 defines the novel physical features that produce the new and unexpected results as presented above, applicant submits that such claim is clearly unobvious and patentable over the prior art.

The Rejection Of Claims 1-7, 10, 11, And 20 Under 35 USC § 102 Is Overcome

Claims 1-7, 10, 11, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,398,491 B1 to Joos et al. (hereinafter referred to as Joos). Joos shows a multistage turbocompressor, which includes, in each case, a plurality of guide-blades cascades and moving-blade cascades arranged alternatively in a conveying direction.

Claims 1-7, 10, 11, and 20 now rewritten as new claims 21-27, 30, 31, and 40 to define patentably over the reference. Applicant requests reconsideration and withdrawal of this rejection, as now applicable to claims 21-27, 30, 31, 40, for the following reasons:

(1) Each of claims 21-27, 30, 31, and 40 points out its novel physical features that distinguish over Joos.

(2) The novel physical features of each of claims 21-27, 30, 31, and 40 produce new and unexpected results and hence are unobvious and patentable over Joos.

Below applicant discusses the above two reasons for each of claims 21-27, 30, 31, and 40.

Claim1, now rewritten as claim 21, recites three novel physical features of the force generator that are absent from the turbocompressor of Joos. The three novel physical features are the rotary shell having an open bottom, the means supporting a gas in relative equilibrium inside said rotary shell, and the stationary means closing the open bottom of said rotary shell. The rotary shell and the means supporting the gas in relative equilibrium inside said rotary shell, which are mounted on the shaft, constitute the rotor of said force generator that completely differs from the rotor of said turbocompressor of Joos. The unexpected result produced by the three novel physical features is the maximum lift, i.e. the maximum difference between the pressures of the gas acting on the lower and upper surfaces of said force generator.

The turbocompressor of Joos does not show any rotary shell having an open bottom, since the rotor of said turbocompressor has no rotary shell. The housing 12 of said turbocompressor together with the plurality of guide-blade cascades LE1-LER can not be considered as a rotary shell, since they are fixed and do not rotate together with the shaft of the turbocompressor. The turbocompressor of Joos does not show any means supporting a gas in relative equilibrium inside a rotary shell, since there is no such a rotary shell in said turbocompressor. The only rotary means mounted on the shaft of the turbocompressor of Joos is the plurality of moving-blade

cascades LA1-LA5 arranged on shaft 11. However, said moving-blade cascades have no rotary shell and push the gas moving over the inner surfaces of guide-blade cascades LE1-LE5 to convey the gas (or a medium) in the direction along the shaft, that is they do not support any gas in relative equilibrium. The turbocompressor of Joos does not show any stationary means closing an open bottom of a rotary shell, since there is no such a rotary shell having an open bottom in the turbocompressor.

The turbocompressor of Joos was not supposed to be used as a lift device. If said turbocompressor was used as a lift device, its lift would be much less than the maximum value, since the difference between the pressures of the gas acting on its lower and upper surfaces is much less than the maximum value. The main surfaces of moving-blade cascades LA1-LA5 are parallel to the axis of shaft 11, their upper and lower surfaces are too small and do not support the gas in relative equilibrium. Therefore, the difference between the pressures of the gas acting on the lower and upper surfaces of moving-blade cascades LA1-LA5 is much less than the maximum value that could be achieved only in the condition of the relative equilibrium of the gas on their lower surfaces. The gas on the lower surfaces of the intermediate guide-blade cascades LE1-LE4 is not supported in relative equilibrium, hence the difference between the pressures of the gas acting on the lower and upper surfaces of guide-blade cascades LE1-LE4 is much less than the maximum value that could be achieved only in the condition of the relative equilibrium of the gas on their lower surfaces. If the gas was not extracted from the turbocompressor of Joos the gas on the lower surface of adjustable preguide-blade row VLE and on the upper surface of the last guide-blade cascade LE5 could be considered as in relative equilibrium. However, the directions of the pressures of the gas acting on the lower surface of adjustable preguide-blade row VLE and the upper surface of the last guide-blade cascade LE5 are opposite to each other. Therefore, when consider the adjustable preguide-blade row VLE and the last guide-blade cascade LE5 together, the difference between the pressures of the gas acting on their lower and upper surfaces is much less than the maximum value that could be achieved only if the gas

on the lower surface of the last guide-blade cascade LE5 was supported in relative equilibrium and the gas over its upper surface rotated together with rotor 11. Thus summing up the pressures of the gas acting on the surfaces of all members of turbocompressor of Joos we see that the difference between the pressures of the gas acting on its lower and upper surfaces is much less than the maximum value.

The special arrangement of the rotor of the force generator and the stationary means closing the open bottom of the rotary shell of the rotor allows them to coordinate strictly with each other. Their strict coordination supports the gas on the lower surfaces of the force generator, i.e. the rotary shell together with the stationary means, in relative equilibrium, while the relative velocity of the gas on its upper surfaces is proportional to the angular velocity of the shaft of its rotor. Thus the specific coordination of the three novel physical features produces the maximum difference between the pressures of the gas acting on the lower and upper surfaces of the force generator, i.e. the maximum lift.

Since claim 21 defines the novel physical features that produce the unexpected result as presented above, applicant submits that such claim is clearly unobvious and patentable over Joos.

Claim 2, now rewritten as new claim 22, is dependent on claim 21. Therefore, new dependent claim 22 incorporates all the subject matter of claim 21 and adds additional subject matter, which make it a fortiori and independently patentable over Joos.

Claim 3, now rewritten as new claim 23, is dependent on claim 21. Therefore, new dependent claim 23 incorporates all the subject matter of claim 21 and adds additional subject matter, which make it a fortiori and independently patentable over Joos.

Claim 4, now rewritten as new claim 24, is dependent on claim 21. Therefore, new dependent claim 24 incorporates all the subject matter of claim 21 and adds additional subject matter, which make it a fortiori and independently patentable over Joos.

Claim 5, now rewritten as new claim 25, is dependent on claim 21. Therefore, new dependent claim 25 incorporates all the subject matter of claim 21 and adds additional subject matter, which make it a fortiori and independently patentable over Joos.

Claim 6, now rewritten as new claim 26, is dependent on claim 21. Therefore, new dependent claim 26 incorporates all the subject matter of claim 21 and adds additional subject matter, which make it a fortiori and independently patentable over Joos.

Claim 7, now rewritten as new claim 27, is dependent on claim 21. Therefore, new dependent claim 27 incorporates all the subject matter of claim 21 and adds additional subject matter, which make it a fortiori and independently patentable over Joos.

Claim 10, now rewritten as new claim 30, is dependent on claim 21. Therefore, new dependent claim 30 incorporates all the subject matter of claim 21 and adds additional subject matter, which make it a fortiori and independently patentable over Joos.

Claim 11, now rewritten as new claim 31, is dependent on claim 21. Therefore, new dependent claim 31 incorporates all the subject matter of claim 21 and adds additional subject matter, which make it a fortiori and independently patentable over Joos.

Claim 20, now rewritten as new claim 40, recites two novel physical features of the mobile object that are absent from the turbocompressor of Joos or any other jet aircraft. The two novel physical features are the hermetically sealed generator chamber and the closure of the rotor of blades having an airfoil cross-section inside said generator chamber. The unexpected results produced by the two novel physical features are the self-action force of the mobile object and the possibility of increasing the lift of the rotor of airfoil blades as many times as desirable due to increasing the pressure of the gas confined inside the generator chamber.

The chamber of turbocompressor of Joos or any jet aircraft can not be considered as a hermetically sealed generator chamber, since the chamber of turbocompressor of Joos has an inlet for the continuous gas supply and tapping points or an outlet for jet spray of any other jet aircraft. In other words, any jet aircraft has the outlet for the jet of its turbocompressor. The turbocompressor of Joos or any other jet aircraft encloses no rotor of blades having an airfoil cross-section in a hermetically confined space, since jets are used for propulsion of jet aircrafts.

Up to now those skilled in the art know that the generation of a self-action force or a lift without the use of matter jets, reactive or external forces has been suggested impossible due to the restrictions defined by Newton's laws of motion. Therefore, the self-action force produced by the rotor of blades having an airfoil cross-section and being enclosed in the generator chamber filled with the pressurized gas is the unexpected result of claim 40. The self-action force allows the mobile object to accelerate itself in any environment (in the air, water, cosmos, etc.) without the use of jets, reactive or external forces. The possibility of increasing the lift of the mobile object of claim 40 due to increasing the pressure of the gas inside its generator chamber allows the rotor to increase the lift without increasing its sizes.

Since claim 40 defines the novel physical features that produce the unexpected results as presented above, applicant submits that such claim is clearly patentable over Joos.

The Novel Physical Features Of Each Of Claims 21-40 Produce New And Unexpected Results And Hence Are Unobvious And Patentable Over Jacoby

In the conclusion the last O.A. stated that the prior art of record, U.S. Patent No. 6,405,976 B1 to Jacoby, and not relied upon is considered pertinent to applicant's disclosure. Jacoby shows a lift device comprising a number of flat counter-rotating discs arranged in an axial configuration, an air blower, air inlets and airshafts for injection of air at the bottom circumference of each disc.

Claims 1-20 now rewritten as new claims 21-40 to define patentably over the reference. Applicant requests reconsideration and withdrawal of this conclusion, as now applicable to claims 21-40, for the following reasons:

(1) Each of claims 21-40 points out its novel physical features that distinguish over Jacoby.

(2) The novel physical features of each of claims 21-40 produce new and unexpected results and hence are unobvious and patentable over Jacoby.

Below applicant discusses the above two reasons for each of claims 21-40.

Claim 1, now rewritten as claim 21, recites three novel physical features of the force generator that are absent from Jacoby's lift device. The three novel physical features are the rotary shell having an open bottom, the means supporting a gas in relative equilibrium inside said rotary shell, and the stationary means closing the open bottom of said rotary shell. The rotary shell and the means supporting the gas in relative equilibrium inside said rotary shell, which are mounted on the shaft, constitute the rotor of said force generator that completely differs from the rotor of said lift device of Jacoby. The unexpected result produced by the three novel physical features is the maximum lift, i.e. the maximum difference between the pressures of the gas acting on the lower and upper surfaces of said force generator.

Jacoby in his lift device does not show any rotary shell having an open bottom and any means supporting air in relative equilibrium inside a rotary shell. Jacoby also does not show any stationary means closing an open bottom of a rotary shell. Jacoby uses rotary discs for producing lift. When a disc rotates, the relative velocities of the air on its lower and upper surfaces are the same. Therefore, the lift of Jacoby's lift device is created only due to the injection of air at the bottom circumference of the disc. Those skilled in the art know that the injected air in the direction of rotation of the disc cannot support the air in relative equilibrium beneath the disc. Moreover, the further increase in angular velocity of the disc gives the same increment of relative velocities of the air upon the lower and upper surfaces of the disc and does not give increase in lift. Consequently, the difference between the

pressures of the gas acting on the lower and upper surfaces of Jacoby's lift device is much less than the maximum value.

The special arrangement of the rotor of the force generator and the stationary means closing the open bottom of the rotary shell of the rotor allows them to coordinate strictly with each other. Their strict coordination supports the gas on the lower surfaces of the force generator, i.e. the rotary shell together with the stationary means, in relative equilibrium, while the relative velocity of the gas on its upper surfaces is proportional to the angular velocity of the shaft of its rotor. Thus the specific coordination of the three novel physical features produces the maximum difference between the pressures of the gas acting on the lower and upper surfaces of the force generator, i.e. the maximum lift.

Since claim 21 defines the novel physical features that produce the unexpected result as presented above, applicant submits that such claim is clearly unobvious and patentable over Jacoby.

Claims 2-10, now rewritten as new claims 22-30, are dependent on claim 21. Therefore, new dependent claims 22-30 incorporate all the subject matter of claim 21 and add additional subject matter which make them a fortiori and independently patentable over Jacoby.

Claims 11-17, now rewritten as new claims 31-37, are dependent on claim 21. Therefore, new dependent claims 31-37 incorporate all the subject matter of claim 21 and add additional subject matter which make them a fortiori and independently patentable over Jacoby. Among the added subject matter claims 31-37 further add the hermetically sealed generator chamber enclosing the force generators and being filled with the pressurized gas. The force generators enclosed in the hermetically sealed generator chamber produce the self-action force of the mobile object of each of claims 31-37. The produced self-action force is another unexpected result of claim 31-37, since up to now those skilled in the art have thought that the enclosed lift devices are unworkable due to the restrictions defined by Newton's laws of motion. The self-action force allows the mobile objects of claims 31-37 to accelerate

themselves in any environment (in the air, water, cosmos, etc.) without the use of jets, reactive or external forces. Another unexpected result produced by the hermetically sealed generator chamber enclosing the force generators and being filled with the pressurized gas is that the self-action force (or the lift) of the mobile object of each of claims 31-37 can be increased as many times as desirable due to increasing the pressure of the gas inside its generator chamber. Since each of claims 31-37 defines the novel physical features that produce the new and unexpected results as presented above, applicant submits that such claims are clearly unobvious and patentable over Jacoby.

Claims 18 and 19, now rewritten as new claims 38 and 39, are dependent on claim 21. Therefore, new dependent claims 38 and 39 incorporate all the subject matter of claim 21 and add additional subject matter, which make them a fortiori and independently patentable over the prior art. Among the added subject matter claims 38 and 39 further add the machine cabin for mounting the force generators which produce the self-action force of the mobile object for vertical taking-off and landing and horizontal motion without the use of jets, reactive or external forces. Since each of claims 38 and 39 defines the novel physical features that produce the new and unexpected results as presented above, applicant submits that such claims are clearly unobvious and patentable over Jacoby.

Claim 20, now rewritten as new claim 40, recites two novel physical features of the mobile object, which are absent from Jacoby's lift device. The two novel physical features are the hermetically sealed generator chamber, which is filled with a pressurized gas and encloses the rotor of airfoil blades, and the pump system for pressurization of the gas in said generator chamber. The unexpected results produced by the two novel physical features are the self-action force and possibility of increasing the self-action force, i.e. the lift, of the mobile object of claim 40 as many times as desirable due to increasing the pressure of the gas confined inside said generator chamber.

Jacoby's lift device has no hermetically sealed generator chamber, since its outer case 1 has central inlet port 2 for introducing air to blower motor 3 that takes in air from the inlet port and pushes it through the clockwise airshafts 21 and counter-clockwise airshafts 22. Its outer case 1 has also the outlet port shown in Figs. 1, 2, 6, and 8 for the exit of the air through the lower disc central apertures 13. Jacoby also does not show any means pressurizing the air in the case of his lift device, since the case is not a pressurized chamber. In other words, Jacoby's lift device operates in the air of the atmosphere as any other conventional lift device does.

Up to now Jacoby's lift device was not supposed to be enclosed in a hermetically sealed chamber and to work in a pressurized chamber, since those skilled in the art have thought that such the enclosed lift device produces no lift due to the restrictions defined by Newton's laws of motion. Therefore, the self-action force produced by the rotor of blades having an airfoil cross-section and being enclosed in the generator chamber filled with the pressurized gas is the unexpected result of claim 40. The self-action force allows the mobile object to accelerate itself in any environment (in the air, water, cosmos, etc.) without the use of jets, reactive or external forces. The possibility of increasing the lift of the mobile object of claim 40 due to increasing the pressure of the gas inside its generator chamber allows the rotor to increase the lift without increasing its sizes.

Since claim 40 defines the novel physical features that produce the unexpected results as presented above, applicant submits that such claim is clearly unobvious and patentable over Jacoby.

Conclusion

For all the reasons given above, applicant respectfully submits that the well grounded new principle and laws of mechanics are added for supporting the credible asserted utility of the claimed invention, the rewritten claims are now in proper form, and that the claims all define patentably over the prior art. Therefore, he submits that this application is now in condition for allowance, which action he respectfully solicits.

Request Claim Drafting Assistance From PTO

Therefore it is submitted that patentable subject matter is clearly present. If the Examiner agrees but does not feel that the present claims are technically adequate, applicant respectfully requests that the Examiner write acceptable claims pursuant to M.P.E.P. § 707.07(j).

Conditional Request For Constructive Assistance

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure, which is also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 706.03(d) and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,



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